Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts—an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Deeth between March 1 and July 31.

Using the Higher Exceedance Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

UPPER HUMBOLDT RIVER BASIN

		STREAMFLOW FORECASTS						
		<------DRIER-------- FUTURE CONDITIONS -----WETTER------>						
		Chance of Exceeding						
FORECAST POINT	FORECAST PERIOD	90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	25 YR. (1000AF)
MARY'S RIVER nr Deeth	MAR-JUL	5.0	20.0	36	77	52	76	47
	APR-JUL	8.0	17.0	31	74	45	67	42
LAMOILLE CREEK nr Lamoille	MAR-JUL	6.0	16.0	24	79	32	43	31
	APR-JUL	4.0	15.0	22	75	30	41	30
NF HUMBOLDT RIVER at Devils Gate	MAR-JUL	6.0	12.0	43	73	74	121	59

For more information concerning streamflow forecasting ask your local SCS field office for a copy of "A Field Office Guide for Interpreting Steamflow Forecasts".

IDAHO WATER SUPPLY OUTLOOK REPORT

APRIL 1, 1992

SUMMARY

THE WINTER OF 1991-92 WILL BE REMEMBERED IN SOUTHERN IDAHO AS THE ONE THAT NEVER HAPPENED. MOST OF THE WATER YEAR'S PRECIPITATION ACTUALLY OCCURRED IN LATE FALL. A DRY AND WARM MARCH CONTINUED THE TREND OF PREVIOUS MONTHS AND ESSENTIALLY SEALED THE FATE FOR WATER SUPPLIES IN MOST OF SOUTHERN IDAHO. WARM TEMPERATURES AND LACK OF MOUNTAIN PRECIPITATION REDUCED SNOWPACK LEVELS TO LESS THAN HALF OF NORMAL AMOUNTS ACROSS SOUTHERN IDAHO. AS A RESULT, RUNOFF FORECASTS IN MANY CENTRAL AND SOUTHERN IDAHO STREAMS CALL FOR LESS THAN HALF OF AVERAGE FLOW. NEARLY EMPTY RESERVOIRS COMPOUND THE PROBLEM, AND MANY AREAS CAN EXPECT ONE OF THE LOWEST WATER SUPPLIES OF RECORD THIS YEAR.

SNOWPACK

Warm temperatures and lack of snowfall during March reduced snowpack levels statewide from the figures reported a month ago. Early to mid-April is typically the peak of the mountain snowpack accumulation, but this year the snowpack has been declining in most areas since mid-March. Half of Idaho's SNOTEL sites reported less snow on April 1 than a month ago, with many stations setting a new record low. Currently, snowpacks range from 50 to 70% of average in northern, central, and eastern Idaho, and only 30 to 50% of average across the southern half of the state. Low elevation snowpacks are almost non-existent. If warm temperatures continue in early April the snowpack will melt slowly, soaking into the soil and potentially reducing the runoff yield.

PRECIPITATION

Precipitation was well below normal across most of the state during March, with most stations reporting less than 40% of average. Boise reported the driest March of the century, and even northern Idaho, with typically low variability in precipitation, received only about one-quarter of the normal March complement. The only part of the state that received over half of normal precipitation during March was southeastern Idaho. Temperatures were quite warm during the month as well, with Boise reporting a departure of 7.5 degrees above normal. The National Weather Service's 30 day outlook for April calls for continuing warm and dry conditions -- not a good sign for Idaho's water supply situation. Spring precipitation is critically needed this year to augment limited snowmelt runoff, improve soil moisture conditions, and delay irrigation water requirements.

RESERVOIRS

Extremely low reservoir storage continues to be one of the major factors in Idaho's ongoing drought situation. Many reservoirs are holding less than 40% of capacity, including Magic, Owyhee, Salmon Falls, Oakley, Bear Lake, Montpelier, and the Boise system. Combined with low expected inflows, these basins will yield very short irrigation water supplies this summer. On a more positive note, reservoir storage in northern Idaho, the upper Snake basin, and the Payette basin is better, with these areas reporting near average storage for April 1. All irrigators who rely on stored reservoir water should keep in touch with their local reservoir company or irrigation district for more specific information.

STREAMFLOW

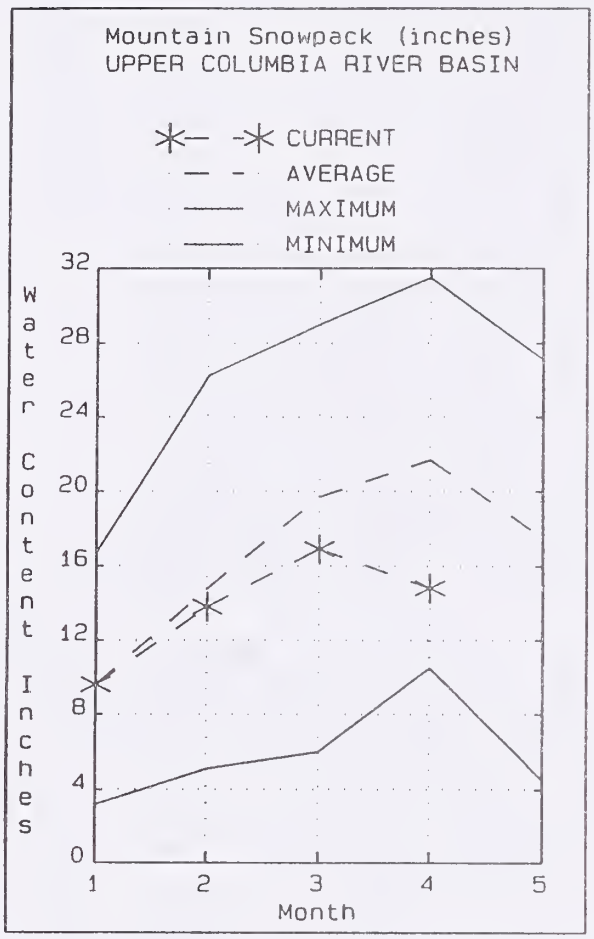
March streamflows were near normal due to warm temperatures and the resultant melting of low and mid elevation snowpacks across the state. The good news stops there, however. With snowpacks at or near the historic minimums in many areas of Idaho and the upper Snake basin, summer streamflow volumes will be far below average again this year unless a significant change in precipitation patterns occurs. Forecasts for northern Idaho streams now range from 50 to 75% of average, central and southern Idaho streams are only expected to produce 15 to 60% of normal flows, and the upper Snake basins range from 40 to 60% of average. Water users in much of southern Idaho should be prepared for CRITICALLY LOW STREAMFLOWS during the summer of 1992.

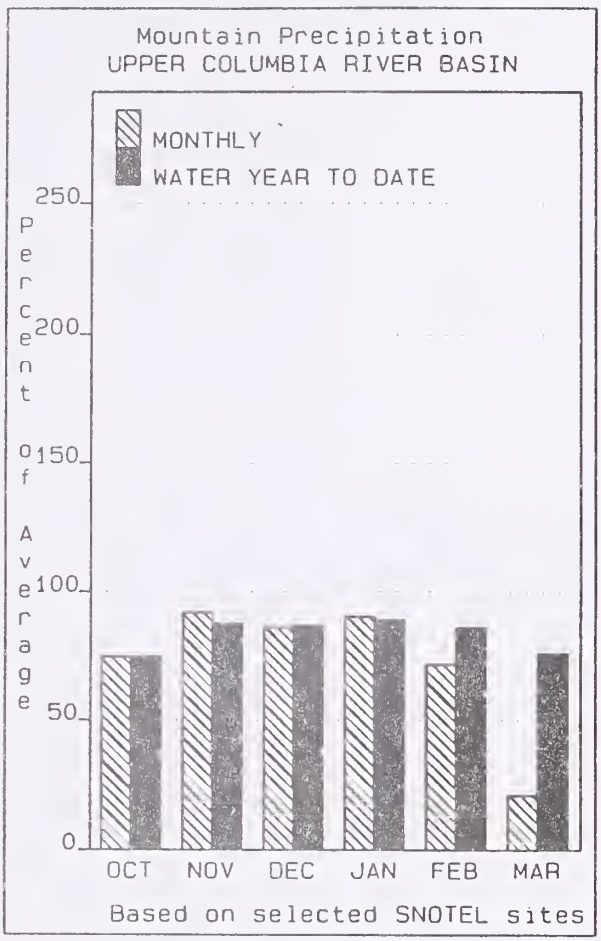
RECREATIONAL OUTLOOK

Warm spring temperatures combined with low snowpack levels will lead to an earlier than normal runoff season with lower peak flows across most of Idaho this year. The best snowpacks are in northern Idaho, and should provide high volume whitewater boating on the Lochsa, Selway, Moyie, and St. Joe rivers. Ample carryover storage in Cascade and Deadwood reservoirs should provide excellent flows for Payette river users later this summer. Snowpacks in the Salmon River basin are 60-65 percent of normal, which will provide adequate boating flows for the South Fork, Middle Fork, and Main Salmon Rivers. Floaters on the Middle Fork Salmon should expect to put in at the downstream Indian Creek launch site somewhat earlier than normal this year. Low flow conditions offer several benefits to the recreational boater. Rivers are accessible earlier than normal, with a shorter period of potentially hazardous high flows. Rivers are clearer for fishing and warmer for swimming, and expansive beaches offer excellent camping opportunities. Additional precipitation and the timing of the spring snowmelt will determine actual flow conditions on Idaho's rivers.

Upper Columbia River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

An unusually dry March has reduced snowpack levels by 10-15% in the Idaho Panhandle. Mountain precipitation was only 15-30% of average during March, an unusual occurrence in the semi-maritime climate of northern Idaho. Currently, snowpacks range from 55 to 65% of average, with all stations showing a net decrease in snowpack percentage since March 1. As a result, streamflow forecasts have decreased from the values published last month, and range from 60 to 77% of average for the spring and summer runoff period. Reservoir storage in the upper Columbia basin is 90% of average (49% of capacity). All things considered, water supplies should still be adequate to meet most user needs in the Upper Columbia River basin this year.

UPPER COLUMBIA RIVER BASIN
Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-SEP	4810	5900	6390	77	6880	7970	8275
	APR-JUL	4190	5130	5560	77	5990	6930	7199
	APR-JUN	3290	4050	4390	77	4740	5490	5701
CLARK FK at Whitehorse Rpds (1,2)	APR-SEP	5380	7200	8030	62	8860	10700	12910
	APR-JUL	4880	6540	7290	62	8040	9700	11730
	APR-JUN	4170	5590	6230	62	6870	8290	10050
PEND OREILLE LAKE inflow (1,2)	APR-SEP	5760	7750	8660	60	9570	11600	14370
	APR-JUL	5280	7100	7930	60	8760	10600	13150
	APR-JUN	4330	6050	6830	60	7610	9330	11390
PRIEST nr Priest River (1,2)	APR-SEP	295	445	515	59	585	735	868
	APR-JUL	280	420	485	60	550	690	814
COEUR D'ALENE at Enaville (1)	APR-SEP	250	420	495	61	570	740	809
	APR-JUL	235	395	470	61	545	705	769
ST. JOE at Calder	APR-SEP	635	725	785	63	845	935	1237
	APR-JUL	595	680	735	63	790	875	1169
SPOKANE nr Post Falls (1,2)	APR-SEP	780	1380	1650	61	1920	2520	2720
	APR-JUL	790	1370	1630	62	1890	2470	2627

UPPER COLUMBIA RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	1951.0	1714.0	2046.0
FLATHEAD LAKE	1791.0	587.7	858.2	751.9
PEND OREILLE	1561.2	638.4	572.6	813.7
NOXON RAPIDS	335.0	320.8	331.7	231.3
COEUR D'ALENE	291.2	168.7	182.2	234.3
PRIEST LAKE	97.7	42.5	31.0	39.8

UPPER COLUMBIA RIVER BASIN
Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	44	55	66
Moyie River	3	48	64
Clark Fork River	72	72	65
Pend Oreille River	106	65	67
Priest River	5	70	70
Rathdrum Creek	4	20	14
Hayden Lake	2	5	4
Coeur d'Alene River	8	70	64
St. Joe River	5	64	64
Spokane River	19	59	54
Palouse River	2	0	0

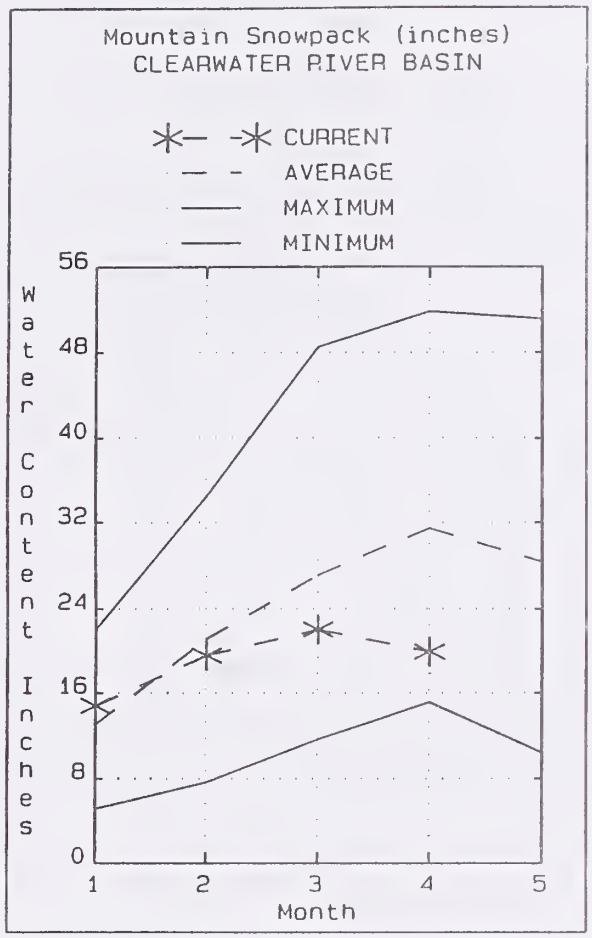
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

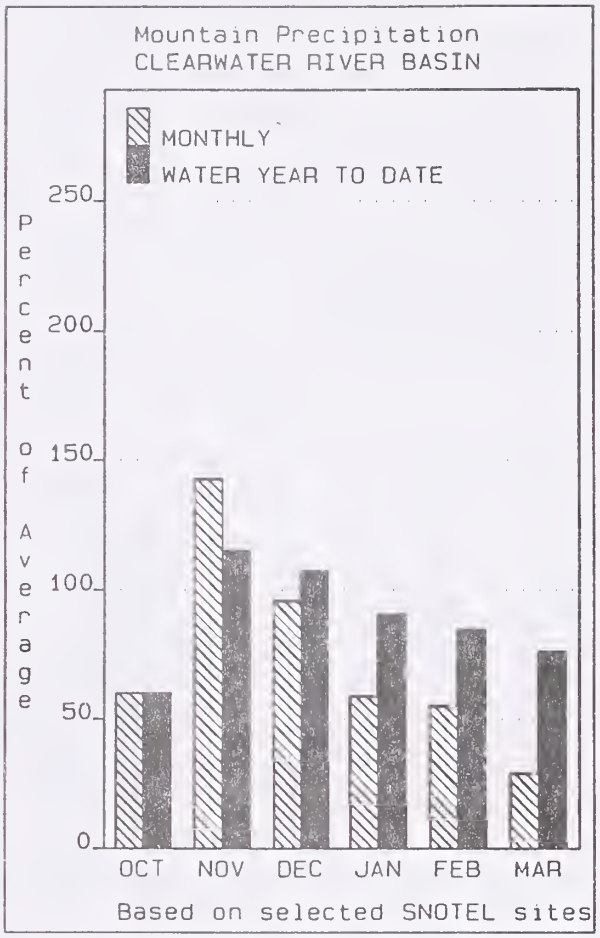
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Clearwater River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

Warm temperatures and very little snowfall during March have taken its toll on the Clearwater basin snowpack. Snowpacks have decreased 10-15% in percent of average from the figures reported last month, and stand at 61% of average for the basin. All but the highest elevation sites are currently reporting less snow than last month, and some low elevation sites have already melted out. Dworshak Reservoir has been operating under a conservative operations plan and is at 89% of capacity, 155% of average. Streamflow forecasts call for 59% of average for Dworshak Reservoir inflow and 49% for the Clearwater River at Orofino. Water supplies should be adequate for most users this summer, in spite of the declining snowpack. River runners should plan for slightly lower than normal peak flows on the Lochsa and Selway rivers, unless heavy spring rains augment the snowmelt runoff.

CLEARWATER RIVER BASIN

Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESERVOIR inflow (1)	APR-SEP	1030	1480	1690	59	1900	2350	2875
	APR-JUL	970	1400	1590	59	1780	2210	2700
CLEARWATER at Orofino (1)	APR-SEP	1110	2030	2450	49	2870	3790	4976
	APR-JUL	1040	1910	2310	49	2710	3580	4718
CLEARWATER at Spalding (1,2)	APR-SEP	2440	3730	4320	54	4910	6200	8052
	APR-JUL	2290	3510	4070	53	4630	5850	7618

CLEARWATER RIVER BASIN

Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3467.8	3102.0	2568.0	1996.2

CLEARWATER RIVER BASIN

Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	13	67	64
Lochsa River	4	68	58
Selway River	7	66	57
Clearwater Basin Total	22	66	61

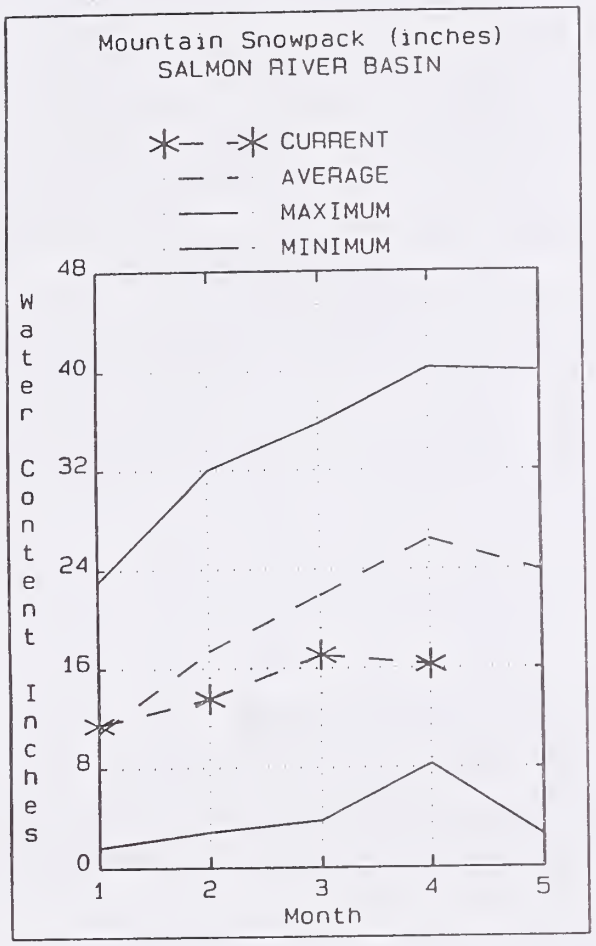
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

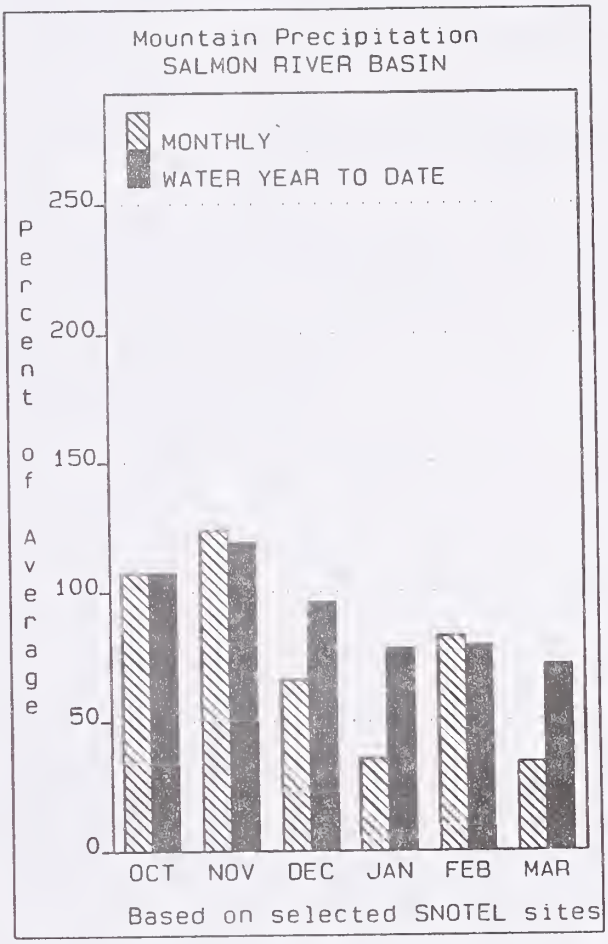
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Salmon River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

Warm and dry would best describe March weather conditions in the Salmon River basin. The basin received only 34% of average mountain precipitation during the month, and warm temperatures began melting the snowpack in the lower elevations. Currently, snowpacks range from a high of 72% of average for the Lemhi basin (the highest figure in the state) to only 48% of average for the Little Salmon basin. Streamflow forecasts have decreased accordingly, and call for 61% of average for the Salmon at Salmon and 57% for the Salmon at Whitebird. If the warm and dry conditions continue, water users should plan for early and lower than normal peak flows, and an early recession to low flow conditions. Irrigators should plan for potential water shortages, especially late in the season on small streams.

SALMON RIVER BASIN

Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-SEP	255	505	620	61	735	985	1019
	APR-JUL	215	430	525	60	620	835	869
SALMON at White Bird (1)	APR-SEP	2200	3260	3740	57	4220	5280	6602
	APR-JUL	1980	2940	3370	57	3800	4760	5956

SALMON RIVER BASIN

Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN

Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	10	88	58
Lemhi River	10	95	72
Middle Fork Salmon River	3	101	61
South Fork Salmon River	3	102	64
Little Salmon River	4	77	48
Salmon Basin Total	30	90	62

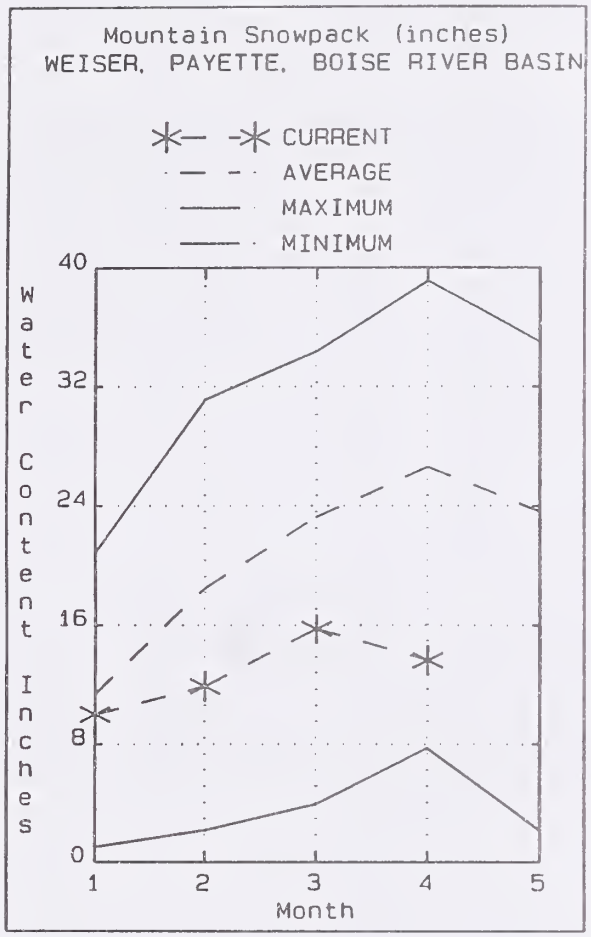
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

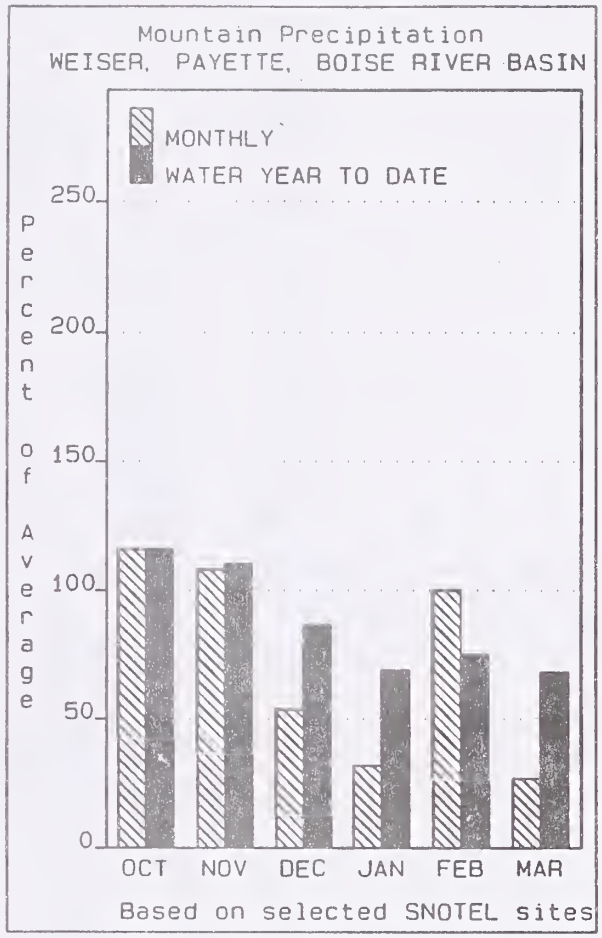
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Weiser, Payette, and Boise River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

The Boise River basin continues to be one of the main areas of concern in terms of the 1992 water supply. Warm temperatures and very little precipitation have reduced snowpack levels during the month, with some stations reporting a record low snow water content for April 1. The Boise River basin is currently reporting a snowpack of only 39% of average. The forecast for the Boise River near Boise has decreased from last month, and current projections are only calling for 33% of average flow. Very low reservoir storage in the Boise system seriously compounds the situation, and Boise valley irrigators could face one of the lowest water supplies of record. The Weiser River basin is in a similar situation, and is expected to yield only 31% of average flow. The Payette basin is considerably better, with near average reservoir storage and streamflow forecasts in the 50 to 60% of average range. Water supplies may be tight in the Payette basin, but no major shortages are expected. Water users should keep in touch with their local irrigation districts for more specific information.

WEISER, PAYETTE, AND BOISE RIVER BASIN
Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER nr Weiser (1)	APR-SEP	4.0	70	128	31	186	315	415
	APR-JUL	4.0	64	119	31	174	295	386
SF PAYETTE at Lowman	APR-SEP	245	275	295	60	315	345	488
	APR-JUL	215	240	260	60	280	305	432
DEADWOOD RESERVOIR inflow (1)	APR-JUL	38	60	70	51	80	102	136
NF PAYETTE at Cascade (1,2)	APR-SEP	153	235	270	51	305	385	533
	APR-JUL	148	220	255	51	290	360	498
NF PAYETTE nr Banks (2)	APR-SEP	210	295	350	51	405	490	690
	APR-JUL	200	275	330	51	385	460	648
PAYETTE nr Horseshoe Bend (1,2)	APR-SEP	400	730	880	50	1030	1360	1755
	APR-JUL	370	670	810	50	950	1250	1618
BOISE nr Twin Springs (1)	APR-SEP	166	240	275	40	310	385	686
	APR-JUL	145	215	250	40	285	355	631
SF BOISE at Anderson Rnch Dm (1,2)	APR-SEP	82	156	190	33	225	300	582
	APR-JUL	82	149	180	33	210	280	544
BOISE nr Boise (1,2)	APR-SEP	250	425	505	33	585	760	1535
	APR-JUL	230	395	470	33	545	710	1421
	APR-JUN	230	360	415	33	475	600	1264

WEISER, PAYETTE, AND BOISE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.3	8.4	5.8	8.7
CASCADE	703.2	448.7	471.5	377.6
DEADWOOD	162.0	60.3	90.2	90.8
ANDERSON RANCH	464.2	85.9	175.4	278.1
ARROWROCK	286.6	146.1	206.7	227.8
LUCKY PEAK	307.0	180.4	95.4	153.2
LAKE LOWELL (DEER FLAT)	177.0	63.3	114.2	152.9

WEISER, PAYETTE, AND BOISE RIVER BASIN
Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	26	14
Weiser River	5	51	31
North Fork Payette	8	82	52
South Fork Payette	5	88	54
Payette Basin Total	14	83	52
Middle & North Fork Boise	7	74	46
South Fork Boise River	9	81	45
Moores Creek	5	51	32
Boise Basin Total	17	66	39
Canyon Creek	2	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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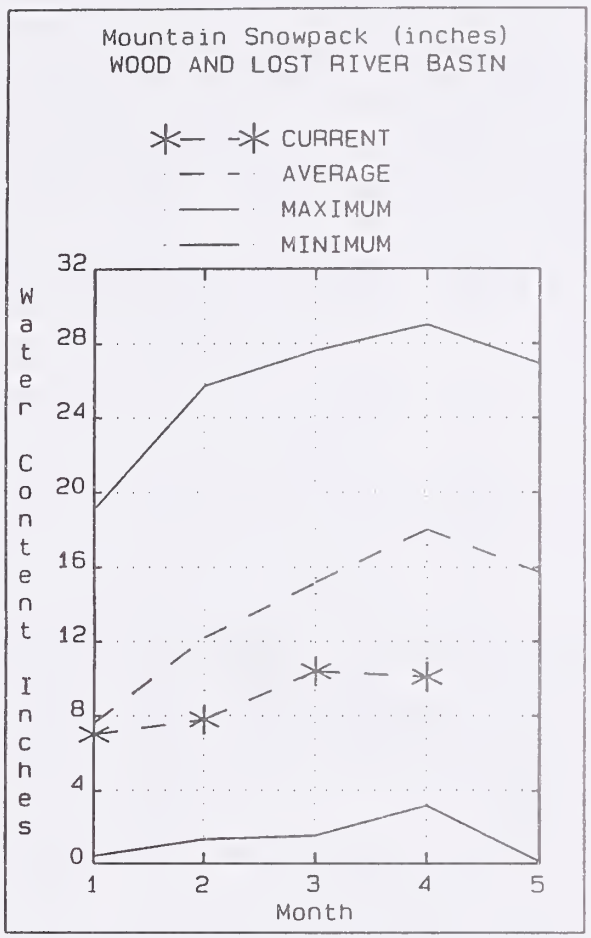
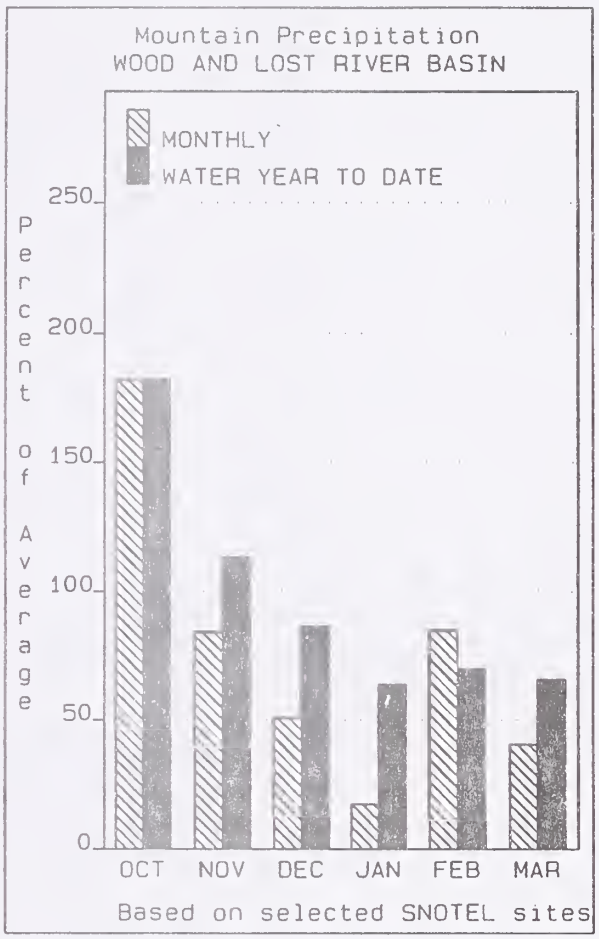
Big Wood, Little Wood, Big Lost, and Little Lost River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

The Wood River basin continues to be the focus of the persistent central Idaho drought. A dry and warm March brought further declines to the mountain snowpack, which is currently only 46% of average for the Big Wood River basin. The inflow forecast for Magic Reservoir is an incredibly low 16% of average, reflecting the cumulative effects of numerous low snowpack years. Magic Reservoir itself is nearly empty, at only 18% of capacity. All these factors point to the prospect of one of the lowest water supplies of record for the 1992 irrigation season in the Wood River valley. Conditions are somewhat better in the Big Lost and Little Lost basins, where streamflow forecasts call for 48 to 64% of average flows. Mackay Reservoir on the Big Lost is currently storing 28,600 acre-feet, which is 64% of capacity. All water users in the Wood and Lost river basins should be prepared for water shortages this summer, and should keep in touch with their local irrigation districts for more specific information.

BIG WOOD, LITTLE WOOD, BIG LOST, AND LITTLE LOST RIVER BASIN
Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD nr Bellevue	APR-SEP	2.0	12.0	33	17	54	86	197
	APR-JUL	2.0	12.0	32	17	52	82	183
BIG WOOD bl Magic Dam (2)	APR-SEP	3.0	15.0	49	16	83	134	309
	APR-JUL	3.0	15.0	48	16	81	129	294
LITTLE WOOD nr Carey	APR-SEP	14.0	26	35	35	44	56	99
	APR-JUL	13.0	24	32	35	40	51	92
BIG LOST at Howell Ranch nr Chilly	APR-SEP	87	111	127	62	143	167	206
	APR-JUL	74	96	110	61	124	146	181
	APR-JUN	66	81	92	65	103	118	141
BIG LOST bl Mackay Reservoir (2)	APR-SEP	53	73	87	48	101	121	182
	APR-JUL	37	56	69	46	82	101	150
LITTLE LOST bl Wet Ck	APR-SEP	15.0	21	25	64	29	35	39
	APR-JUL	12.7	16.9	19.8	64	23	27	31
LITTLE LOST nr Howe	APR-SEP	20	24	27	63	30	34	43
	APR-JUL	16.0	19.0	21	64	23	26	33

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD AND LOST RIVER BASIN
Reservoir Storage (1000 AF) - End of March

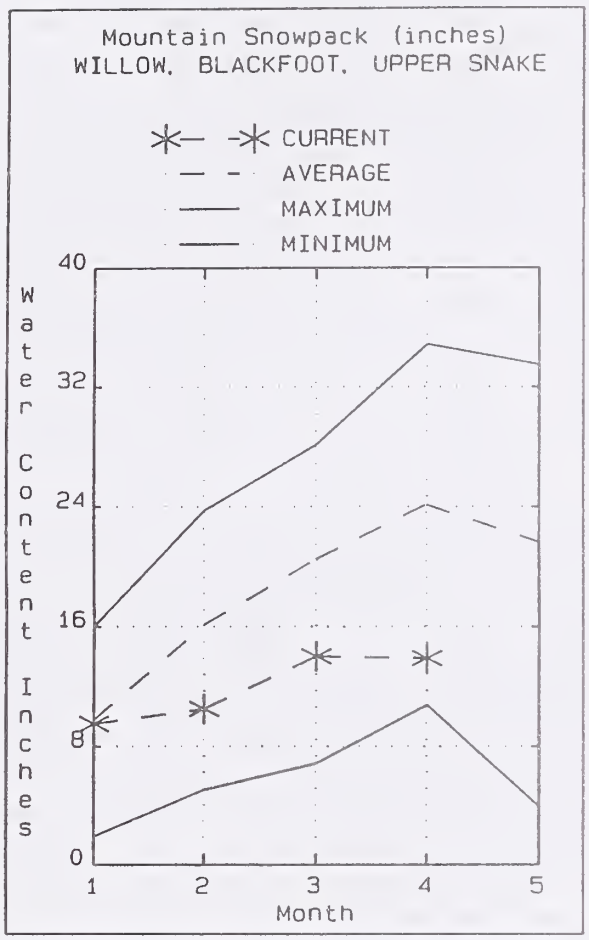
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	34.1	27.5	117.4
LITTLE WOOD	30.0	22.9	14.7	18.4
CAREY VALLEY		NO REPORT		
MACKAY	44.5	28.6	26.6	33.3

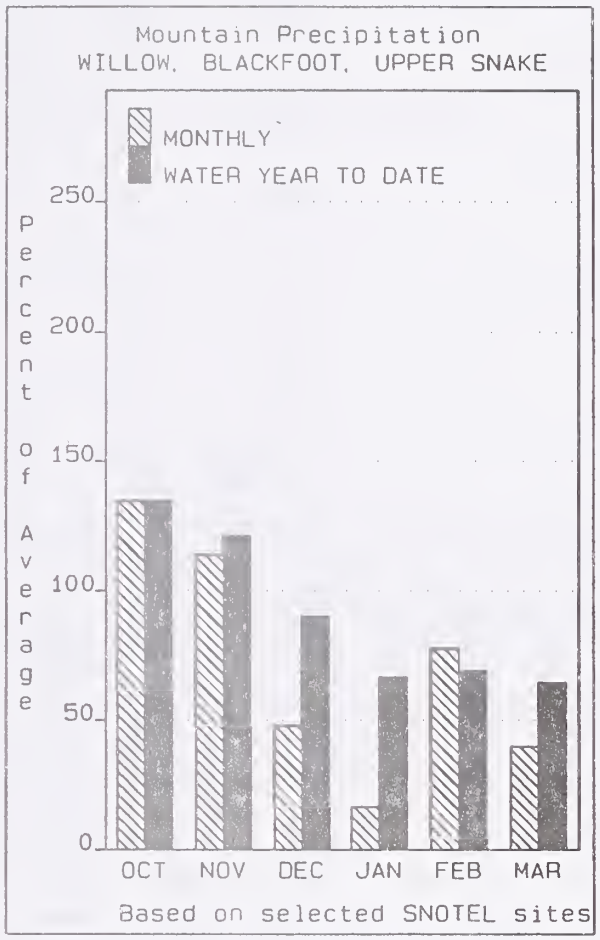
WOOD AND LOST RIVER BASIN
Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	8	97	57
Camas Creek	5	28	12
Big Wood Basin Total	13	84	46
Little Wood River	4	90	53
Fish Creek	3	63	32
Big Lost River	7	109	64
Little Lost River	4	101	67

Willow Creek, Blackfoot, Upper Snake, and Portneuf River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

March precipitation continued the dry February trend, with only 40% of average falling during the month. As a result, snowpack percentages have decreased and now range from a high of 70% of average on the Henrys Fork basin to only 25% for the Blackfoot River. Combined usable storage in nine key reservoirs stands at 80% of capacity and 114% of average. Water supply forecasts are highest in the headwaters of the Henrys Fork (57% of average) and drop considerably downstream to only 39% of average for the Snake River near Blackfoot. Water supplies may be tight on the Snake mainstem, with some potential shortages expected for irrigators who rely on instream diversions. Water users should stay in contact with their local irrigation district for more specific details in their area.

WILLOW CREEK, BLACKFOOT, UPPER SNAKE, AND PORTNEUF RIVER BASIN
Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK nr Ashton (2)	APR-SEP	350	390	415	57	440	480	730
	APR-JUL	265	290	310	57	330	355	544
HENRYS FORK nr Rexburg (2)	APR-SEP	525	680	780	51	880	1030	1540
	APR-JUL	380	500	580	48	660	780	1219
FALLS nr Squirrel (1,2)	APR-JUL	159	200	220	60	240	280	364
TETON ab S Leigh Ck nr Driggs	APR-SEP	94	109	119	60	129	144	199
	APR-JUL	65	76	84	55	92	103	153
TETON nr St. Anthony	APR-SEP	225	255	280	59	305	335	471
	APR-JUL	174	200	220	58	240	265	380
SNAKE nr Moran (1,2)	APR-SEP	350	410	455	52	500	565	869
PALISADES RESERVOIR inflow (1,2)	APR-SEP	1060	1480	1670	44	1860	2280	3763
SNAKE nr Heise (2)	APR-SEP	990	1470	1790	44	2110	2590	4049
	APR-JUL	800	1200	1480	43	1760	2160	3451
SNAKE nr Blackfoot (1,2)	APR-SEP	955	1780	2160	39	2540	3360	5482
	APR-JUL	935	1370	1670	38	1970	2440	4444
PORTNEUF at Topaz	APR-JUL	14.0	23	29	40	35	45	72
	APR-SEP	18.0	30	37	40	45	56	93

WILLOW CREEK, BLACKFOOT, UPPER SNAKE, AND PORTNEUF BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ISLAND PARK	127.6	109.6	100.4	119.3
GRASSY LAKE	15.2	12.4	13.4	11.2
JACKSON LAKE	824.7	637.1	556.5	525.9
PALISADES	1357.0	1003.7	532.3	968.2
AMERICAN FALLS	1700.0	1476.4	1501.0	1452.5
BROWNLEE	975.3	942.1	821.0	449.1
BLACKFOOT	348.7	125.1	100.8	260.7
HENRYS LAKE	90.4	90.4	84.0	80.1
RIRIE	96.5	52.9	49.2	53.1

WILLOW CREEK, BLACKFOOT, UPPER SNAKE, AND PORTNEUF BASIN
Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Camas-Beaver Creeks	4	109	63
Henrys Fork River	12	86	70
Teton River	8	77	62
Snake above Jackson Lake	10	71	59
Pacific Creek	3	61	51
Gros Ventre River	4	66	55
Hoback River	6	62	47
Greys River	6	63	47
Salt River	6	72	56
Snake above Palisades	34	68	54
Willow Creek	8	31	27
Blackfoot River	5	32	25
Portneuf River	11	42	30
Toponce Creek	3	42	31
Snake abv American Falls	56	58	46

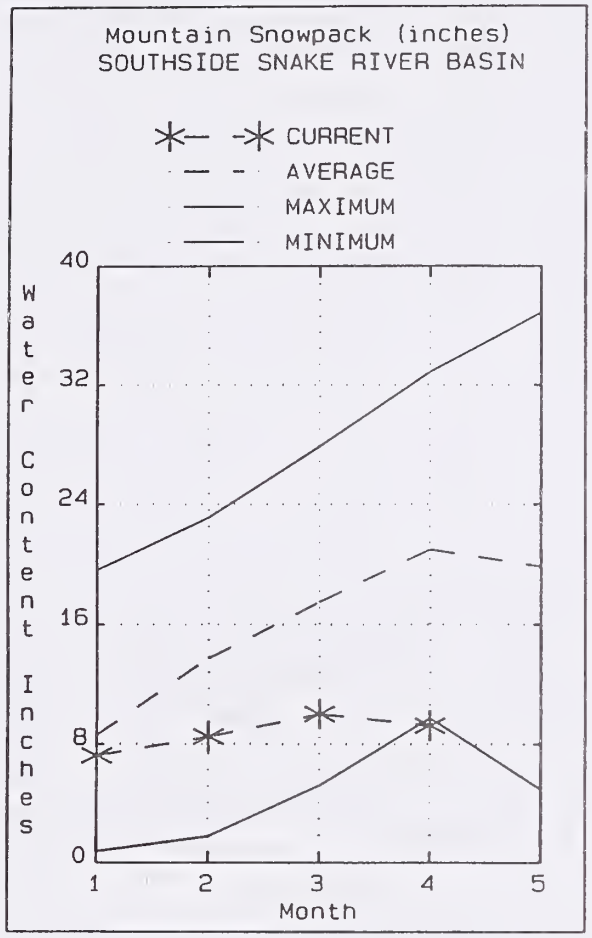
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

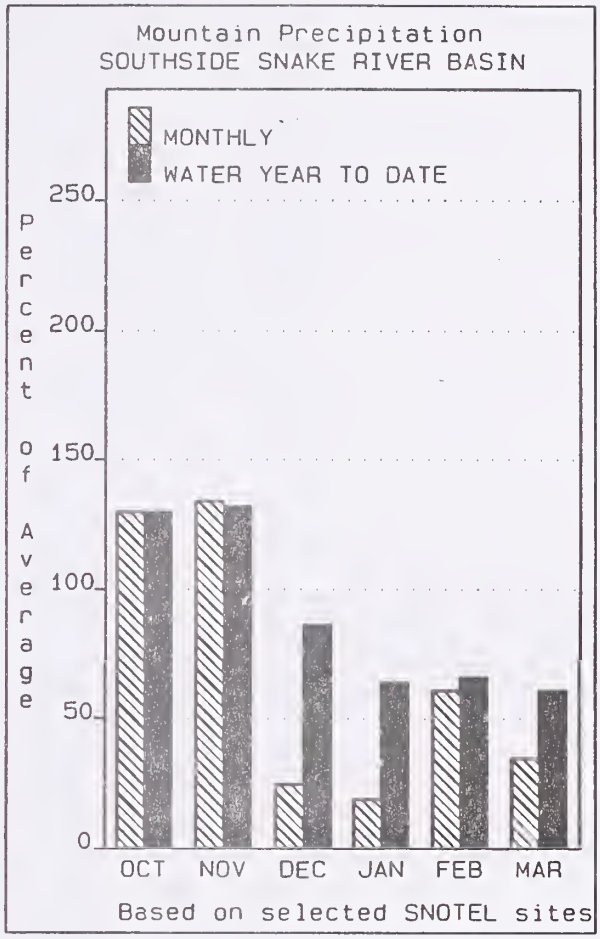
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Southside Snake River Basin

April 1, 1992





WATER SUPPLY OUTLOOK

Warm temperatures and little precipitation have reduced the snowpack to one of the lowest on record for this time of the year. Mountain precipitation was a disappointing 33% of average during March and is only 60% of average since October 1. Some snow measuring stations in the Goose Creek and Salmon Falls drainages are reporting record minimums for April 1. The Owyhee basin is reporting a record low snowpack of 11% of average, and the only snow remaining is above the 7000 foot elevation. Streamflow forecasts reflect the low snowpack and call for 30% of average flow for Salmon Falls Creek and only 15% of average for the inflow to Owyhee Reservoir. These low forecasts, combined with reservoir storages of less than 25% of capacity, will produce CRITICAL WATER SHORTAGES for this season. Water users should stay in contact with their local irrigation district for more specific information.

SOUTHSIDE SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESERVOIR inflow	APR-SEP	0.3	4.7	9.6	30	14.5	22	32
	APR-JUL	0.3	4.2	8.7	30	13.2	19.9	29
SALMON FALLS CK nr San Jacinto	APR-SEP	1.0	12.0	26	31	40	62	84
	APR-JUL	1.0	10.0	24	30	38	58	80
	APR-JUN	1.0	11.0	23	31	35	54	75
BRUNEAU nr Hot Spring	APR-SEP	2.0	26	53	24	80	120	221
	APR-JUL	2.0	25	50	24	75	113	209
OWYHEE nr Gold Ck (2)	APR-JUL	0.3	0.9	5.2	18	10.1	17.4	29
OWYHEE nr Owyhee (2)	APR-JUL	0.9	4.3	12.9	15	27	47	86
OWYHEE nr Rome	APR-JUL	4.0	19.0	57	15	136	250	377
OWYHEE RESERVOIR inflow (1,2)	APR-SEP	8.0	25	63	15	146	325	418
	APR-JUL	4.0	20	59	15	140	320	390

SOUTHSIDE SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	77.4	13.9	13.3	34.0
SALMON FALLS	182.6	22.2	22.7	62.3
OWYHEE	715.0	170.2	289.4	579.0

SOUTHSIDE SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Raft River	6	70	50
Goose-Trapper Creeks	5	62	39
Salmon Falls Creek	7	53	36
Bruneau River	9	53	31
Owyhee Basin Total	17	19	11

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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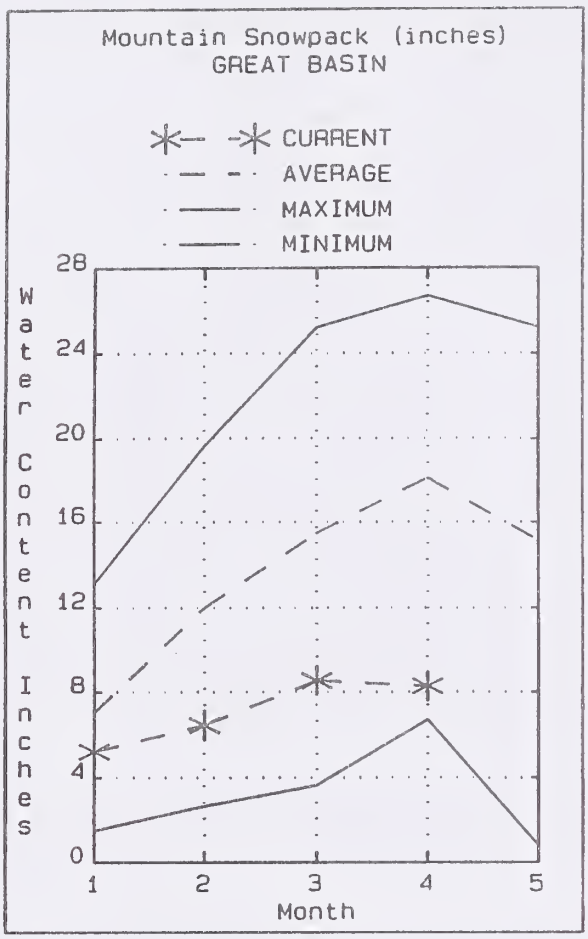
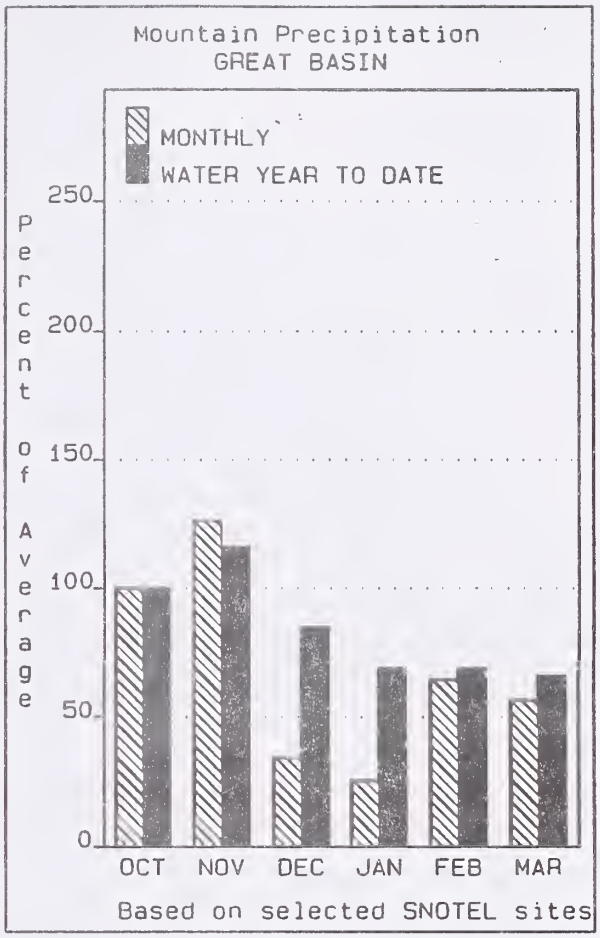
Great Basin

April 1, 1992





WATER SUPPLY OUTLOOK

March precipitation in the Bear River area was better than in other areas of Idaho, but the 57% of average received was not enough to improve the water supply outlook. Consequently, snowpacks have decreased and now range from a high a 55% of average for the Bear River above Harer to only 14% of average for the Malad River. Many snow measuring sites in the Bear River area are reporting the lowest or second lowest April 1 snow water content on record. Streamflow forecasts call for less than half of average flow for the Bear River, Montpelier Creek, and the Cub River. Reservoir storage for Bear Lake and Montpelier Creek is very low at 36 and 40% of capacity, respectively. Low streamflow forecasts combined with poor reservoir storage could produce some of the lowest water supplies on record. Water users should stay in contact their local irrigation district for more specific details.

GREAT BASIN

Streamflow Forecasts - April 1, 1992

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR RIVER near Harer	APR-SEP	11.0	68	135	39	200	300	345
MONTPELIER CK nr Montpelier	APR-SEP	0.4	2.8	5.6	40	8.4	12.5	13.9
CUB RIVER near Preston	APR-SEP			20	39			52
	APR-JUL	5.2	13.2	18.7	40	24	32	47

GREAT BASIN

Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	505.8	518.0	1002.1
MONTPELIER CREEK	4.0	1.6	0.8	1.6

GREAT BASIN

Watershed Snowpack Analysis - April 1, 1992

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Bear River (above Harer)	10	72	55
Montpelier Creek	4	52	38
Mink Creek	5	50	37
Cub River	4	52	35
Malad River	6	24	14

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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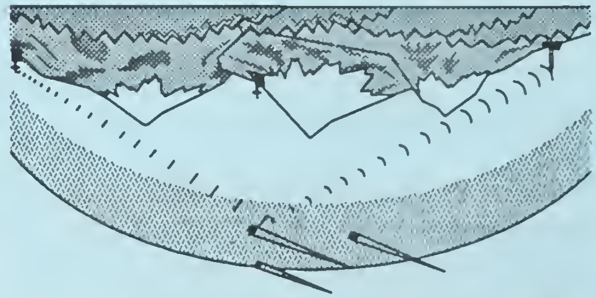

United States
Department of
Agriculture

Soil
Conservation
Service

Basin Outlook Reports

April 1, 1992

In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.

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